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Facts concerning the Natural History, &c. of the Gigantic Irish Deer (Cervus giganteus hibernicu

By H. D. Richardson, F.R.P.S.

With Richard Glennons
best respects to Mr Mahon

FACTS

From Geo. C. Mahon, Esq.

CONCERNING

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THE NATURAL HISTORY,

&c.

OF THE

GIGANTIC IRISH DEER,

(*CERVUS GIGANTEUS HIBERNICUS.*)

BY

H. D. RICHARDSON, F.R.P.S.

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THE GIGANTIC IRISH DEER,

CERVUS GIGANTEUS HIBERNICUS.

Cervus Megaceros.—HART.
C. Giganteus —GOLDFUSS.

ALTHOUGH such quantities of the osseous remains of this extraordinary relic of a former age have from time to time been exhumed in various parts of Ireland, as even to cease being regarded in the light of objects of wonder or curiosity; yet, strangely enough, but little seems to have been discovered of its actual history, nay, even of its form. This fact constitutes my motive in offering the present paper to the public. I have read what has been already written upon the subject; I have carefully examined the remains of the animal, and the places where they have been found; I have availed myself of the experience of other competent persons ; I have duly investigated the subject in all its possible bearings, and I think I can not only furnish satisfactory and unanswerable arguments for differing from my predecessors, but can also almost—if not altogether—remove the veil of mystery which has hitherto so unaccountably obscured it. I should be sorry, indeed, were I understood to write in a boasting or vain-glorious vein ; such is very far from my intention ; but I cannot avoid feeling a degree of pleasure, not unnaturally mingled with exultation, at the unqualified success with which my labours have been crowned, after a very protracted, difficult, and anxious research.

I may premise by stating my views—the object of my paper will be to prove their correctness. These are as follow :—

I. The gigantic deer is not antediluvian, but existed cotemporary with man, at a period by no means very remote ; and was by man used—his flesh for food, and his hide for clothing.

II. The animal was essentially and solely Irish.

III. Its form has not been hitherto accurately described, as I am prepared to show that it was not possessed of a genuine bony tail, and that the female was destitute of horns.

Such is a general outline of the result of my investigations; as I proceed, I shall revert to other mistakes that have been entertained respecting the animal, and shall controvert them as they happen to be connected with the progress of my remarks.

It may be as well to describe such existing animals of the deer tribe as resemble, or have been supposed to resemble, that of which I am about to treat. These are the Moose of America, the Elk of Europe, the Rein-deer of Europe, the Carabou or Rein-deer of America, the Wapiti, the Red-deer, the Roebuck, and the Fallow-deer.

The Moose is short in body, very lengthy in the legs, awkward in its gait—so much so as not unfrequently to trip itself up by treading upon the heels of its forefeet with the toes of the hinder ones—has a remarkable short neck, large, heavy ears, small, dull eyes, short tail, and thick, lumpy, palmated antlers—the palm being widest between the skull and the middle of the expansion—no brow antler, a prolonged and flexile nose. The Moose is about the size of a horse, or upwards of five feet from the toe to the fore-shoulder.

The Elk of Europe closely resembles the Moose in general form ; it is readily domesticated and used formerly to be employed by the inhabitants of Sweden and Norway, like the Rein-deer, for the purposes of draught, for which he was admirably qualified by his extraordinary speed. This animal may be regarded as nearly identical with the American Moose.

The Rein-deer has been said to bear a resemblance at once to the ox and to the stag ; the latter in size, general form, and zoological characters, and approaching the former in the shape of its head, the shortness and thickness of its neck, and the shortness and muscularity of its legs. It is used by the inhabitants of the Northern countries in which it is found both for draught and burden. The horns of the Rein-deer vary much in form and size in different individuals, and their females alone have, unlike others of the deer tribe, horns; in their most perfect form they present three branches; they may be described as consisting of a long, slender, compressed skin, inclined backwards with an outer and upward sweep; a brow antler—sometimes on one horn only, sometimes on both—vertical and somewhat palmated, hanging over the muzzle: a little above this, a second antler, which ascends upwards and becomes palmated at the extremity, sometimes dividing into two or three small branches; besides these, one or two snags arise from the main stem, which usually terminates palmated with deep digitations. The Carabou or Rein-deer of America is perfectly identical with that of Europe in form and habits, although by some zoologists considered as a distinct species; and the same remarks apply to a third variety, the Rein-deer of Asia. I have just seen a fine specimen of Carabou at Mr. Glennon's in Suffolk-street, shot by Captain Atkinson, in which one brow antler is palmated and double, the other is a single spike, curved upwards, like that of the red deer.

The Wapiti is much larger and more powerful than our European stag, and is of a darker colour; its horns attain a vast size, often weighing upwards of 60lbs. the pair; very short tail—if, indeed, tail it can be called, being scarcely more than rudimentary, not being bony.

The Red-deer has three antlers produced from the beam,—the brow antler, the bezantler, and the antler royal—besides the snags and surroyal in which the beam terminates. The males have canine teeth, and, in old animals, the brow antler is often double.

The Roebuck has short, cylindrical, rugged horns, when fully developed, divided above into three snags, the largest of which is in front; tail is extremely short. This is the smallest of our deer, not exceeding twenty-six or twenty-seven inches in height at the shoulder.

The Fallow-deer, the common ornament of our parks, is too well known to need much description.

The horns are characterized by broad palms, divided at the extremities into tynes or digits—with brow antlers single and commonly palmated. The Fallow is without a doubt the nearest existing type of our extinct Irish deer, whom he closely resembles in the form of his horns and in the other portions of his skeleton, with the exception of the tail.

The horns of the Irish deer resembling, or, indeed, except in reference to their extraordinary size, being identical with those of the Fallow in form, it will at once be seen that they must differ essentially from those of every other animal I have described—differing, also, to such an extent, as to remove all doubt of their gigantic wearer having been in any degree allied with them. It was for a long time considered that the Irish deer being an animal of such vast size, we must look for his original to some continent of similarly large proportions. Ireland was too small an island to produce so gigantic an inhabitant, and, accordingly, the continent of America was pressed into the service, and its native Moose pointed out as the existing type of our extinct deer. Ireland, according to many, had been once only a portion of one prodigious continent, of which America is only a remnant; and the same deluge which submerged all the intervening portions of land, likewise dealt destruction to many of our ancient animals, amongst which was that now under consideration. Further notice of this belief would be foreign to our subject; but I may just observe, the theory can no longer derive any support from the imaginary identity of two very dissimilar animals.

Although, if we refer to the strict etymology of the word, any bones or other substances that have been buried in the ground, even for the shortest period, may be termed *fossil;* still, that epithet is usually only applied to such as have become changed in character and quality, retaining only the outward form of what they originally had been —resembling, in short, what are ordinarily termed petrifactions. In this sense of the word, the bones of the Irish deer are by no means fossil; they will emit, when burned, the well-known smell—ammonia is given off abundantly from the horns, and soup has been made from portions of the bones by Archdeacon Maunsell, and a specimen sent to the Dublin Society. Fatty matter, adipocere or marrow, has been met with in the interior of the bones, and I have repeatedly found and peeled off the periosteum from their surface. Great quantities of a substance called mineral tallow have been found near the osseous deposits of this deer, which I believe to have been derived from them.

We generally hear and read of these remains having been found in *shell-marle*. Now, this mode of expression is very incorrect, and not at all such as should be employed by scientific men when dealing with such a subject as this. These remains are, on the contrary, *never* found in marle, but in a substance known by the name of calcareous tuffa. Much hinges upon this. This is no idle cavilling at words, for on this point, I may say, rests the question as to whether or not the bones were antediluvian. I must here be permitted to explain the difference between these substances. Marle is, or has been formed from the debris of primitive rocks of the limestone formation, and its origin must be referred to a period antecedent to or coeval with the Deluge: and this substance, acted on by the acids of the sea-water, was deposited in beds, and may now be found in this form in many localities under the name of marle.

The calcareous tuffa is, on the other hand, the debris of *recent rocks* of the limestone formation, carried down from elevated and cultivated places by the surface water or springs, and deposited in vallies or low ground. The analysis of the marle is simple, and shows it to be a simple substance— that of the tuffa discovers different acids, alkalies, and salts, furnished by the decomposition of the many vegetable substances, oxides and other earths, and metallic substances with which it meets and combines on its way to repose, or until it becomes dried by the evaporation of its moisture; when, indeed, it is harder and more impenetrable than the mountain rock whence it was produced. The inquirer may see calcareous tuffa in many parts of the county Dublin, and even in the vicinity of the city. One remarkable instance of its occurrence is on the side of the Three Rock Mountain, at Holly Park, where also is a limestone gravel pit, a very extraordinary locality, by the way, for such a thing as a gravel pit, so high above the level of sea, in the granite rock. The surface, or rain water, passing down through the gravel or sand dissolves a portion of the carbonate of lime which it carries with it along the surface of the granite, and passes across the road into Marley.

On the road near White Church this substance may be seen, affording ample demonstration of its extraordinary hardness by standing up in strong relief, surviving, unimpaired, all the wear and tear of the road.

It may also be seen at old Dunleary, (Kingstown) where also it occurred on a portion of the railroad, and cemented the sand or gravel together with such power that it had to be blasted with powder, defying the ordinary efforts of the pick-axe, the tuffa here assumes a white radiated appearance, and was, by some of our mineralogists, mistaken for sulphate of strontium. I cannot leave the subject of calcareous tuffa without adverting to a most interesting appearance presented by it on the strand at Killiney, especially as I do not think any of our Dublin naturalists have observed or described it. It is here made use of by a little animal of the polypus sort, about a quarter of an inch in length, and two lines in thickness, of a fleshy red colour, and trumpet-shaped. The tuffa being here carried down by the surface water towards the sea mixes intimately with the sand, these little animals collect the finer portions of the lime, and each builds for himself in the sand a hexagonal tube about three inches and a half deep. This forms their dwelling; to the superior extremity of this tube the polypus adds a thimble-shaped edge or cup—this contrivance is designed to enable the little creature to secure his tiny prey. When a person walks along the strand, and treads upon these little dwellings, they may be felt *crackling* beneath the foot like frozen clay. They lie as closely together as the combs in a bee-hive: that part of the strand occupied by them is from two to three perches in extent, and the lime holds them sufficiently together to permit of a cluster of them being dug up and taken home for observation; if heated upon a fire-shovel, or otherwise, they come out of their habitations, and may be thus readily obtained for more minute examination. It is the more remarkable that these interesting little creatures have hitherto been neglected by our naturalists, inasmuch as they and their operations are calculated to throw a very strong light on the formation of what geologists call silurian or coral marble, which we so frequently meet with beautifully polished in our shops.

At Ballinascorney, in the neighbourhood of Dublin, near the residence of Ponsonby Shaw, Esq., calcareous tuffa is found in great abundance coating a variety of substances, such as reeds, brambles, bushes, &c., and a great deal of it is carted through the city for rock work. It also occurs on the property of P. La Touche, Esq., near Kilcullen, in the County Kildare, close to Sallymount, the residence of Rev. Mr. Roberts, where it assumes the appearance of mossy-covered granite rocks, and may be seen by any person passing. In Old Connaught, in the neighbourhood of Bray, is a well by the road side, where may be seen grass, weeds, &c., the upper parts vegetating, and the roots resembling stone, these and the stalks being so hard in their calcareous covering that they will readily break, but will not bend. The coating is deposited, in this instance, with surprising rapidity, and induration takes place equally fast. It will be seen, therefore, how very great a difference subsists between marle and calcareous tuffa, and how any confusion could have occurred on the subject I can scarcely conceive. In the pits where the remains of the Irish deer are found, the tuffa is deposited in thin layers. The surface water carried down the tuffa mixed with such earth and vegetable matter as it encountered in its progress; the tuffa being the heaviest, fell to the bottom, and above it was, of course, deposited a layer of the lighter materials. The succeeding flow produced a corresponding deposit of tuffa first, and above it, as usual, the vegetable matter, until, at length, all the heavy particles having been deposited, the whole was surmounted by decayed vegetable matter, earthy loam, &c., and the surface speedily became covered with herbage. It is strange, but no less true, that one of the plants of most frequent, I may, indeed, say of *invariable* occurrence on the surface of the tuffa is the isis hippuris, the mare's tail, or German rush, and the roots of this plant may be traced downwards to actual contact with the tuffa. I am prepared to give ample authority, and to furnish incontrovertible evidence of every assertion I make, and, if I were not, I would hesitate in stating on my own authority alone the extraordinary fact, that, not only are these remains never found unless where tuffa is deposited, but, that where the mare's tail is found in connection with such deposit, we are invariably certain of obtaining the remains by digging, and these appearances present themselves most frequently near those mounds usually called raths, or Danish forts. By the aid of these landmarks an experienced person, or, indeed, any one of common observation will have no difficulty in detecting the presence or absence of these remains in any locality that he may even cursorily inspect. Now, as to my authority—Colonel Bruen of Carlow—a gentleman who has studied this subject most carefully, and who probably possesses more accurate knowledge of our extinct deer than any other person in the united kingdom, and, further, who has in his possession, and has exhumed, or caused to be exhumed, more heads, and other remains, than perhaps any other individual living. That gentleman knows with such certainty the appearance of the landmarks that guide the observer to the places where these remains lie, that on one occasion he happened to be crossing some of his land where men were at work, employed, as well as I can recollect, in draining a piece of ground. As the Colonel passed the men, he ordered them to take care of such bones as they might find, for that they would find the remains of large *deer*. Coming back the same way in the evening, Colonel Bruen found several bones lying upon the bank, together with a superb head and horns, which he subsequently presented to J. Alexander, Esq. of Milford. A similar instance of this peculiar knowledge was exhibited by Colonel Bruen in the county Kildare, on which occasion were found the magnificent head and horns at present in possession of —— Taylor, Esq., of Mount Street Crescent, Dublin, where they are still to be seen in that gentleman's drawing-room. I can also refer to Mr. Richard Glennon, the well known taxydermist and mineralogist of Suffolk-street in this city, a highly intelligent and respectable man.

Mr. Glennon says that he *never errs* in his judgment relative to the position of these remains, being chiefly guided in his search by such landmarks as I have described. Amongst other instances of the penetration of some persons in this respect, he mentions the discovery of such a deposit by Mr. Metge, on his property in the County Meath, near Athlumley, in Mr. Glennon's presence. The bones may have been conveyed thither by flow of water from Dunshaughlin, which lies a few miles above it, and whence a stream now passes to it—numbers of skulls of the deer and other quadrupeds were found near Dunshaughlin by Surgeon Wilde, and described by him in a paper read before the Royal Irish Academy.

On the subject of shell marle I may remark, before quitting this for another department of our inquiry, that marle is to the touch, or to the cut of a spade, plastic and clammy; calcareous tuffa is, on the other hand, gritty. Marle is invariably composed of one solid bed—tuffa is frequently deposited in layers. Tuffa may sometimes contain, scattered through its substance, a few shells, of the helix stagnalis for instance, or auricularia; but it would require the decomposition of all the shells that could have been collected from all our rivers, lakes, and ponds from the days of Adam to the present day, to supply a quantity of marle equal to the quantity of tuffa we have in one single county in Ireland. In a conversation with Mr. Glennon, he tells me that in the county

Kildare he procured a wooden trough open at both ends, which he forced down into the bog through the layers of tuffa, and bringing it up full, dried it gradually in the open air. In the process of drying, the vegetable deposit between the layers of tuffa shrunk, and, in doing so, exposed to view several seeds, amongst which were the seeds of the common wild flax, which emitted a smell similar to that of common flax when undergoing the process of bleaching. The shrinking of the vegetable matter thus leaving the layers of tuffa exposed to view so plainly that Mr. Glennon was enabled to count them; he reckoned upwards of 2,000 layers of tuffa in the depth of about two feet six inches. Some may conceive that this would indicate an antiquity of upwards of 2,000 years, but such is most improbable, as we know that several flows of water occur in the one year, forming as many layers. This is also the opinion of L. Ogleby, Esq., who has devoted much attention to the subject, a gentleman of the most accurate research and well known as an eminent botanist.

The tuffa appeared white when wet, but on drying it became bluish grey from imbibing phosphate of iron. The tuffa was in this instance covered with a luxuriant growth of wild mustard.

I trust that my readers will perceive the great importance of establishing the non-identity of tuffa with marle, and also of demonstrating that it is only on the former substance that these osseous remains are ever found. Marle being, as I have shewn, a diluvian, and tuffa a comparatively recent deposit, this circumstance alone sufficing to establish the fact of the Irish deer having existed contemporary with man. Mr. Ogleby in travelling in search of specimens connected with his favourite study through the counties of Cork, Kerry, and Waterford, observed that he never met with any of these bones, nor heard from any person of their having been found, although he instituted the strictest and the most particular inquiry. He also observed that the principal rocks of those counties were clay-slate, slate-clay, green-stone, indurated clay, and drawing chalk, with here and there patches of other rocks, *which never yield tuffa.*

Ribs of the Irish deer have been found perforated by some sharp instrument, and, in some cases, with evidence of such a formation of callus, as showed that the wound had not been immediately mortal. One, presenting such appearances, is in the museum of the Royal Dublin Society; and I have seen several myself. Dr. Hart very justly conceives such wounds to have been inflicted by the stroke of an arrow, which possibly remained in the wound for some time before dropping out; but a recent writer objects to this inference, suggesting, that if an arrow had caused the wound, it would have penetrated farther in, have pierced the viscera, and have caused death before nature could have called to the animal's assistance her wondrous reproductive powers: in other words—that death would have been nearly instantaneous, and consequently, that no formation of callus could have taken place. I must here coincide with Dr. Hart. From such antlers as I have examined—and the number has been no small one—and from what I have observed of the sharpness of the tynes, and the great power the animal must have possessed, I feel confident that the writer alluded to is mistaken in attributing the holes I describe to the blow of a horn received from an opponent in combat. I feel satisfied that the point of a tyne, coming in contact with a surface so convex, so narrow, so smooth, and so *elastic* as that of a rib, would, instead of perforating, glide off and pass between the ribs, penetrating the cavity behind them; or, if driven with such force as to avoid this slipping, it would not stop at making a small hole, but would crush through all opposition, and smash ribs and all to pieces. The Wapiti is not nearly so powerful an animal as the Irish deer must have been; yet, a few years since, one of the male Wapitis in the gardens of the Zoological Society of London, in a fit of rage drove his brow antlers into the body of a female of the same species, lifted her up, and *threw her down dead!** The arrow-head, on the contrary, that we most frequently find now a-days, is of a crescent-like form, and not such a weapon as would pierce far; and we well know that velocity gives more perforating power to a blow than actual force or weight, so that we can readily imagine an arrow penetrating and sticking in a rib, when the most violent blow of a horn might be turned aside—might crash and kill certainly, but most likely not perforate the bone. As to what some writers say about having seen bones exhibiting marks of exfoliation, supposed by them to have arisen from hurts received in conflict with each other, I cannot but deem the objection irrelevant, and as such not requiring a reply. I can not, however, avoid observing, that I see no reason why such injuries might not, with as great probability, have been attributed to injuries received from passing rapidly among trees, while endeavouring to elude the hunters—from the blow of a stone or club—in short, from any other cause as well as that of combat.

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* Mus. Animated Nature, p. 135.

Pepper, in his History of Ireland, (a book now very scarce), expressly states that the (then) ancient Irish used to hunt a very large black deer, the milk of which they used as we do that of the cow; the flesh of which served them as food, and the skin for clothing. This is of itself a valuable observation, in support of my view, but it becomes doubly so, when coupled with the following. In the "Archæologia Britannica" is a letter of the Countess of Moira, giving an account of a human body, found in gravel, in a bog, under eleven feet of peat, completely clothed in antique garments of hair, conjectured to be that of the Cervus Hibernicus.

Some object to receiving this fact in evidence, not unnaturally remarking, that if the hair was thus preserved in the garments of the man, we should have also found some of it with the bones of its original possessor. This objection would never have been advanced, had these gentlemen been more practically acquainted with our bogs and mosses, and had they reflected a little before giving it utterance. The man was found *in a bog*, and was thoroughly soaked in bog-water ; the hair and hide were therefore strongly impregnated with tannin—on the antiseptic virtues of which I need make no comment—and they would have remained ages longer in the same position, had the bog also remained unchanged, without an approach to decay. Now it is a general, but a very erroneous impression, that our deer horns and bones are found in *bog*. In the deep red bog they never have been found ; nor *in* any bog whatever, nor any where but *on* the calcereous tuffa, *under* the superjacent black bog. I already observed that the tuffa was deeply covered with vegetable remains, mixed with earthy loam, mould, &c. It is so ; and this it is that, having been mistaken for bog, has given rise to the erroneous impression I speak of ; this marshy covering is also by some occasionally called black bog. As a confirmation of the opinion that these deposits are comparatively recent, I must mention the following fact :—Colonel Bruen states that there is on his property in the county Carlow one of these places, which in his youth was quite soft and swampy, and unfit to bear the lightest pressure, and which is now hard and firm, so much so, that cattle graze upon it. Here, then, a few years have witnessed the hardening of this mass—had the superior strata been deposited *very* long before the place was discovered, it would have been already indurated. Again, Sir William Betham, a gentleman whose authority must have the greatest weight in any matter connected with Irish antiquities, has, in a conversation with Mr. Glennon, stated, that he found some bronze or brass tablets, the inscription on which attested the fact that the ancient Irish fed upon the flesh and milk of a great black deer.

The form of the place in which these remains have been usually found is, when excavated, that of a basin, and evidently the hole is in many cases the work of man.* The extent of these cavities is from a rood to half an acre, sometimes smaller, and from eight to fourteen feet in depth, shelving gradually inwards from the sides to the centre; the black turf on the surface is usually about three or four feet in thickness, and is mixed with clay and vegetable mould. These places are invariably found in the immediate vicinity of those mounts* called by the country-people Raths or Danish forts, and it will be seen how intimately these erections are connected with our deposits of bones, and how this fact will tend to elucidate circumstances which have so very long puzzled the closest investigations of philosophy and science. I shall suffer facts, plain and unvarnished *facts*, to speak for themselves.

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* When not the work of man, it is evident that these holes had been water-holes, or wet pits, formed truly by nature, but eagerly adopted by parties wishing to put offal out of sight, and to prevent its tainting the air.

On the property of Hugh Palliser, Esq., at Castle Warden, in the County Kildare, such a receptacle as we are speaking of existed. Mr. Palliser had already formed his opinions relative to these Danish forts, and the contents of this place were accordingly carted away, until the mound was almost entirely cleared out. There were here found a great variety of cooking implements—of hatchets—knives—strange looking culinary utensils—charcoal ashes—large stones half roasted, together with quantities of spear and arrow heads—of combs, and bronze, iron, and bone skewers for holding the mantle, beside these were found quantities of bones. The inference appeared to Mr. Palliser, as it does to me, too obvious to require comment. These Raths were *baking hearths*, used to dry a supply of food for the consumption of the army of the conquering invader, or for the numerous retainers of their feudal chieftains, and, when they had done with the bones, they were thrown into natural or artificial vallies near the spot, to prevent their tainting the air. If they had come thither by accident, why should we so frequently find *heads by themselves*, but we can readily imagine the reason when we admit of human agency. Also—but I shall simply state facts. Mr. Glennon excavated a hole on the Drogheda road, about seventeen miles from

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* The neighbourhood of such natural water-holes was chosen as the site of the mount, for reasons that will presently be seen; or, where the holes have been artificially formed, the mount may have been first constructed.

Dublin ; the hole had been originally discovered to contain bones by a man who was rising ochre for the Dublin market ; he here found quantities of the bones and horns of deer, and he observed that even some degree of care had been bestowed on the position given the remains in casting them into the pit, in order to make it contain the greatest possible quantity, and to get rid of the interference of the horns. The tynes of the horns were invariably placed downwards, and the palate of the mouth upwards ; had they been conveyed to the spot by accident, or even thrown in at random, the reverse of this position would have been the natural result. Layers of mould were likewise found between them, furnishing an inference that they had been thrown in at different times, and not all at once, and the spine was found divided into portions ; the cervical vertebræ were found apart with the horns ; the dorsal and the lumbar were likewise found by themselves ; the under jaw lay many feet, in some cases, from the skull, and many of the bones presented plain marks of *the hatchet* by which they had been severed from each other, as if by a skilful butcher of the present day.

In the same hole were also found the bones of pigs, of the long and short faced Irish cows, of sheep, the red and fallow deer, and others—portions of all of which have been preserved, and will be shown by the finder. It is objected that the soft parts have never been found ; I have stated two instances in which they have : but is it known by those who make the objection that, of all animals with which we are acquainted, the deer becomes the soonest putrid ? It is also objected that the hide with the hair is not found. It is not found with the bones truly, for if it were, I should give up my opinion as to the animals' remains having been placed in these receptacles by man, who surely would never wantonly cast away such a valuable article of clothing, but it has, as recorded by the Countess of Moira, been found in one instance, and in its proper position, *on the person of its human wearer*.

It is objected that Cæsar and Tacitus have not alluded to the existence of such an animal. I do not care about contesting this point, as I think it of little value. Those writers may have noticed it, and their works may have been lost; but, at all events, they have said little or nothing about Ireland, the real habitat of the animal; and Cæsar describes an animal under the name of alces, which, allowing for the ignorance then prevalent on the subject of natural history, (and which has rendered the description so obscure,) may as well have been our great deer as anything else.

The remains have a very dark appearance in general, which gives them an aspect of far greater antiquity than they ought, under other circumstances, to present. Perhaps my readers will be pleased that I account for this; it is owing to the presence of *iron* in the bones. It may be remembered that the deposit on the Drogheda Road was discovered by a man whose occupation consisted in collecting iron ochre for the Dublin market. This iron ochre is produced by the decomposition of vegetables, whence some have called it bog iron; it has been carried down by the surface water, and deposited among the bones, from the depth of from two to three feet. It is eagerly sought after under the name of *bog iron*, and is used as a mordaunt for fixing the colour in dying wool for our well-known home-made and homely, but comfortable Irish frieze. This iron coming in contact with the bones, chemical action ensues with their ammonia and phosphate of lime, forming very minute crystals of the form of an acute rhomboidal prism. These crystals are found in great quantities in the interstices of the horns, the whole of which has been filled by them in many specimens I have inspected; the bones also have absorbed much iron, and hence their darker colour and greater hardness than recent bones. Dr. Aldridge, of this city, read a paper a few months ago before the Dublin Natural History Society, giving a most minute and interesting analysis of these crystals, which was published in Saunders' Newspaper.

The hole of which I speak was sixteen yards long, and fourteen broad, and the bones with the iron were found, at a depth of from four to sixteen feet, reposing as usual on calcareous tuffa.

Need I say more, need I adduce further evidence of the comparatively recent existence of our gigantic Irish deer—of its having existed contemporaneously with man, and furnished him not only with food and raiment, but with a noble quarry for pursuit —a fit game for a warrior, and sufficiently dangerous to create a zest for the chase in the brave hearts that followed it. I think that the facts I have produced must carry conviction to the minds of all, even of those who have hitherto maintained other views, and I think I have likewise explained the nature of the Danish forts or raths, which, in their turn, support in the strongest manner the collateral evidence we possess of the existence of the Irish deer at a comparatively recent period, and its subserviency to the wants of man.

I now come to the second division of my subject, to the proof that the cervus megaceros of Dr. Hart is fully entitled to the epithet of Cervus Giganteus Hibernicus, or gigantic Irish deer ; in other words, to show that the animal was essentially and solely Irish.

It surely cannot invalidate this assertion to demonstrate that two or three remains of the Irish deer have been found in other parts of Europe, there is clearly no reason why so splendid a creature should not have been obtained from this country, and an attempt made to naturalize him elsewhere, an attempt, however, that must have signally failed, when we reflect upon the comparatively small number said to be met with in other countries, and the prodigious quantities constantly found in Ireland. But I am fully prepared to question whether even one single specimen of this creature's remains were ever *bona fide* found out of Ireland. I am aware that *many* have been *said* to be so, but I am sure that I can reduce the *many* to a very *few*, if not to a *cipher*.

In Dr. Molyneux's History of Ireland, published as a reprint in A.D. 1726, we are told, that in A.D. 1684, "two of these heads were dug up near Turvey, the mansion seat of the Lord Barneval, within eight miles of Dublin." "In the year 1691 Major Folliott told me that, digging for marle near the town, Ballymackward, where he lives, not far from Ballyshannon, in the county of Fermanagh, he found, buried ten feet under plain solid ground, a pair of these sort of horns, which he still keeps in his possession."

"Such another head as one sent by Lord Capel to King William, with both the horns entire, was found some years since by one Mr. Van Delure, in the county of Clare, buried ten feet under ground, in a sort of marle, and were presented by him to the late Duke of Ormond, then Lord Lieutenant of Ireland, who valued them so highly for their prodigious largeness, that he thought them not an unfit present for the king, and sent them to England, to King Charles II., who ordered them to be set up in the horn gallery at Hampton Court."

I merely quote these remarks, to show that it is a much longer time since these remains began to attract notice than is commonly supposed. Some will tell us that the first of them was the

" skeleton found in the Isle of Man," and presented to the Museum of the Edinburgh University, by the Duke of Athol. Probably some of my readers will be surprised to learn, for perhaps the first time, that this skeleton was not originally found in the Isle of Man, but, as doubtless many others "*found*" elsewhere, was brought from Ireland. The head and horns were found in the county Longford, in the parish of Forgney, by a farmer named Fannin, while searching for, and taking up bog-oak, in a low pasture land. A person named Crampton, bought it in Hawkins' Street, Dublin. Crampton was an Englishman, and was delighted to obtain possession of what was to him so great a novelty. He obtained the remainder of the skeleton from different persons in Dublin, and took the whole to the Isle of Man, where he resided. The skeleton was disposed of by Crampton to a second party, whose name I do not recollect, and by that person given or sold to the Duke of Athol. I state this on the authority of Mr. Glennon, who in turn gave me that of

Crampton himself. A comparative anatomist will at once recognise, on examination of this skeleton, that it has been made up. It is also imperfect, wanting several important bones.

The skeleton in the Museum of the College of Surgeons in London, was also *made up* of several lots of bones, by Dr. Macartney, who resided near Gorey, in the County Wexford. It was also very incomplete when he sent it thither, wanting then twenty-eight bones.

Several bones of this animal have been said to be found in different parts of England and the Continent. No wonder, indeed, that such should be the case; for Mr. Glennon alone has been sending vast quantities from this country for the last forty years, and that an occasional fragment might be lost and found again, would not be very surprising. That such has happened I can prove. Sir Philip Crampton, our own justly esteemed and respected Surgeon-General, packed a head, and forwarded it to the care of his son, at Frankfort, on the Rhine, for presentation to an institution. This head did not arrive safely at its destination, but miscarried—I shall not attempt to explain how—and fell into the hands of a person, who published an account of it, asserting its having been found in a pit in some part of Germany. This person was, I dare say, sincere in his assertions, having been imposed upon himself; but unfortunately for the credit of Germany, the published account came under the notice of the true proprietor, who traced out the circumstances, and found the head to be the identical missing one, that had been sent from Ireland to Frankfort.

Besides this, I would be slow in believing all bones stated to be so, to be really the bones of deer, having seen such blunders made by men of known science. I have been present when the skull of the Irish deer has been mistaken by men of science for that of the bison, the cow, or the horse! How many bones then of the *Elk*, or some unknown animal, extinct long before the flood, may have been hastily supposed to be those of the deer; and once a man of scientific name pronounced them to be such, the subject was no farther investigated, and the error remained undetected, and became adopted by every subsequent writer.

England, France, Germany—these countries were greatly superior in ancient times to Ireland, in point of cultivation, still how very few remains of our deer have been reported to be found in those countries, and how incredible have been the numbers found in this. But why, as I have already remarked, should we not have *sent* them thither? That we did so, probably in exchange for grain, is, I conceive, certain; and this part of my question must be granted, as a natural consequence, on admitting the truth of the Irish deer's having been cotemporary with man—a fact I have already proved to a demonstration; and it was with this view that I commenced this paper with that portion of my subject. It was said that the horns of this creature were found near Etampes, in France; but just as might be expected, as soon as that eminent naturalist, Colonel Hamilton Smith, turned his attention to the matter, he at once pronounced them to be those of the *Rein-deer.* I do, however, wish that Colonel Smith would not call our Irish deer an *Elk.*

Those horns found at Scania, had no brow antlers—a narrower palm, and more curved upwards than ever occurs in the fallow deer—the best existing type of the extinct animal to which I could refer.

Those found at Abbeville, in France, are said to have had no peduncles on the skull—the horns rising immediately from the frontals.* The brain was likewise flattened between the brow and bezantlers, and the palm was digitated with a regularity that I have never seen in the Irish, or in the common fallow deer. These horns were also not remarkable for size, being only about half as large again as those of the fallow deer.

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* How such an assertion as the absence of peduncles could have been made, I am at a loss to conceive—every zoologist knowing that they are present in every animal of the deer tribe, from the Roebuck to the Moose; and, for my own part, I have yet to learn that such an unusual conformation as is here described is proper to any animal that ever wore a horn.

In order to show how numerous have been the heads and other remains, of this animal, the Irish deer, found in its native country, I shall mention a few supplied by Mr. Glennon, to different persons, in various places; and, of course, not only must he have omitted some in his detail —the communication having merely been made to me in a casual conversation with him—but others must have also found and disposed of similar fragments.

First as to perfect skeletons. From Mr. Glennon have been obtained

That in the British Museum.

That in the possession of the Duke of Manchester.

That in the possession of the Earl of Derby.

That in the Museum of Trinity College, Dublin; and two remaining in Mr. Glennon's own possession, one of which exceeds in size and *perfectness* every skeleton of the Irish deer that I have seen.

These skeletons I have named are perfect, and are very fine for their size, especially that in Trinity College, Museum, Dublin. I must here particularly dwell upon the last mentioned, and I feel confident that, under the judicious management of the talented curator, Mr. Ball, it will ultimately prove a credit alike to him and to the city of Dublin. As it is, we owe much to him for the extraordinary improvements he has effected in our University Museum, during the short space of time that it has been under his direction.

These skeletons, however, scarcely equal, any of them, more than half the size of the prodigious skeleton in Mr. Glennon's possession, to which I have alluded.

Mr. Glennon has furnished the head and horns to an amazing number of individuals, amongst whom he recollects the following :—

A magnificent set of horns, the largest I have ever seen, and the most perfect, though I have had opportunities of inspecting hundreds, to Abraham Baker, Esq. of Blessington Street, in this city.

Two to the Earl of Enniskillen.

One to the Earl de Grey.

Two to the Duke of Manchester.

One to the late Lord Powerscourt.

Two to Lord Ashtown.

Two to Lord Castlereagh.

One to the Earl of Clonmel.

One to Sir Shafto Adair.

One to Sir Philip Crampton.

Three to Colonel Bruen.

One to —— Walker, Esq., Q.C., Granby Row, Dublin.

One to Colonel Verner, M.P.

One to —— Cahir, Esq., Mountjoy Square.

One to R. Cane, Esq., Dawson Street.

One to —— Alcock, Esq., of Wilton, County Wexford.

One to R. Guinness, Esq., Kildare-st., Dublin; Forming a total of FOUR PERFECT SKELETONS, and twenty-two sets of head and horns! all found and disposed of by one individual. Mr. J. J. Nolan, of Bachelor's Walk, in this city, has also two very fine skeletons, and a number of unusually large heads and horns.

Contrast this statement with the meagre account of very dubious specimens, to the number of at most half a dozen fragments, that have been found, or said to have been found in England or on the continent; and, coupling the remarkable difference with what I have already observed, I feel satisfied that no one will ever again hesitate to award to this superb creature his true name of Cervus *Hibernicus*, the addition of *Giganteus* is too obviously demanded by the vast superiority of size these remains exhibit over the bones of any other animal of the deer tribe, to require any recommendation of mine, or to be likely even to become the subject of controversy or disputation.

I now come to the third division of my opinions. The female of the Irish gigantic deer was destitute of horns, and neither she nor the male had a genuine *bony* tail.

For a very long time it was conceived that the extinct Irish deer belonged to the same family with the reindeer, was indeed identical with that animal, and accordingly it was naturally supposed that the female, like her mate, was supplied with horns, for of all the existing animals of the deer tribe the females of the European elk and the reindeer are alone furnished with frontal furniture. The mistake has, however, been discovered, and is now generally admitted, so that I shall require to adduce no absolute proof, but merely to state a few facts in connection with the subject for the purpose of explaining why such a mistake continued for so long a period.

The horns of the deer appear to be closely connected with his virility. If a certain operation be performed while he has his horns, he never casts them, (I shall explain this *casting* presently) if while they are off, he never regains them, if upon one side, he loses the horn on that side, and so on, hence we would naturally expect the male alone to have horns, and so it is, with the exceptions I have mentioned. The horns are lost and renewed annually, increasing in size and the number of their tynes up to a certain period. Colonel Bruen, who has more heads of the Irish deer than any man living, and whose authority on the subject I regard as paramount, states that this period is ten or eleven years, after which tyne after tyne falls off, until at length nothing but the bare spike remains. In the Irish deer the full number of tynes amounts to seven on each antler, but I have counted as many as nine. Colonel Bruen says, that, if deer be well fed, the tynes are more in number, and are more perfectly developed than under circumstances of privation. Hence, it will be understood why the antlers of the ancient animal that have been found present so many diversities of form. Colonel Bruen can show skulls of the same kind of deer with a single brow antler, others with a double one—some have it pointed—some palmated—some have it resembling that of the red deer—some again divided into three or four parts—some with but one brow antler, a single spike curved upwards more than a foot in length. This natural diversity was not at first understood, and when imperfectly developed antlers were found they were supposed to belong to the female deer. When the head of the true female deer was found it was for a long time taken to be that of a horse. As an instance of such a mistake, I may mention that Archdeacon Maunsell, who presented the skeleton to the Royal Dublin Society, stated that among eight found by him, there was not a single female; but I know that there were two skulls found with these, and cast aside as being those of a horse—of course they were those of the female deer. Colonel Bruen has had skulls of the female deer in his possession for the last fifteen or twenty years. The first he obtained had been, as usual, mistaken for that of a horse, and had been broken considerably by the finders before he rescued it.

On the property of the Rev. Mr. Roberts of Sallymount, county Kildare, and in his very lawn, were found heads and skeletons of three male deer and one female; the labourers were employed in sinking a cess-pool, and on this occasion also, when the female head was exhumed, the steward who was superintending the work threw it back again, supposing it to be that of a horse. Of these skeletons, Mr. Roberts retains one in his own possession, gave one to his son-in-law, Mr. Walker of Granby Row, Dublin, and has given the other to Shaw Lefevre, Esq., Speaker of the House of Commons. In the excavation on the Drogheda road already described, Mr. Glennon found two female heads, but with no bones belonging to them.

The honour of having first discovered and described the head of the female deer has been attributed to Professor Phillips, who states that he found it amongst a parcel of bones sent him by Dr. Macartney of the County Waterford. Now, Dr. Macartney was a shrewd observer, a scientific naturalist, and a man much interested in such a discovery; and it does appear strange that if he found such a thing as the skull of a female deer, he would not, instead of giving it away in silence and neglect, have recognized the importance of his discovery, and not only have retained the skull in his own possession, but have published an account of it himself, besides which, these remains have never been found nearer to Waterford than Wexford, the former being one of these counties that do not furnish calcareous tuffa, and Mr. Ogleby, who made this remark, also ascertained the fact that no such remains were ever found in the county. The fact is, that Colonel Bruen was probably the very first who ever discovered and recognized the head of the female deer, and the next discoverer who recognized the importance of his discovery, and brought the fact before the public, was Mr. James Underwood, a most intelligent and accurate observer of nature, and a person who has since rendered himself well known to scientific amateurs by his zeal and activity as a collector of fossils, old coins, and other relics of antiquity. Mr. Glennon at the same time (long antecedent to Mr. Phillips' account) published an account of the circumstance in Saunders' Newspaper. The head in question was disposed of by Mr. Underwood to the Earl of Enniskillen for the sum of fifty pounds.

In order to be satisfied that the gigantic Irish deer was destitute of a true bony tail, we have only to examine his skeleton, but this must be done with care, for in many skeletons we find the tail supplied of *papier maché*, or from the tail bones of a horse or cow.

It will be seen on examining the pelvis of deer that in such as possess tails the ossa coccygis protect it superiorly in a horizontal position. In such animals as are destitute of such an appendage, man for instance, these bones curve inwards and forwards. Such is the case with the Irish deer, and the anatomist will perceive at a glance that if the bones are articulated correctly, (sometimes they are misplaced) no tail could exist without interfering with the soft parts contained within the pelvis. The Wapiti deer possesses only a rudimentary tail, and nevertheless the sacrum is not so much curved inwards as that of the Irish animal. In these observations, I have been aided, and my opinion confirmed by scientific friends, competent to assist in such an investigation ; and

I have examined at least a dozen pelves with the same result. I may also remark that the absence of a tail will be almost as certainly predicated, from the abruptness with which the ossa coccygis taper at the extremity. If there were any continuation of them, beyond one or two, they would become so fine as to merge absolutely in a point no thicker than a straw. If, therefore, there existed any appearance of a tail in the living animal it must have been merely a skinny appendage, and not the bony member duly supplied with muscular tissue, and capable of considerable motion, such as we usually term a tail.

In all animals of the deer tribe that I have examined, possessing a true, bony, *wagging* tail, I have found the bones terminating the vertebral column, commonly called the tail bones, to be hard, and solid, and imperforate, and not carrying through them a continuation of the spinal marrow, and therefore less liable to decay or decomposition than such as are porous and perforated. Now, the latter is the case with the tail bones of the deer, yet it is well ascertained that the tails of cows and other animals found in the same deposits with the deer have been obtained, and though we have found all the other bones of the cervus Hibernicus down to the most minute, not even exceeding a marble in size, we have never yet met with what would furnish the animal with such a tail as would project beyond the pelvis.

I now trust that I have established my views relative to our Irish deer, and that he will not in future be regarded as such a mystery, and for the present take leave of my readers, trusting that they do not regret their kind patronage of my little essay.

FINIS.

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